

SPECIAL REPORTS

ON

EDUCATIONAL SUBJECTS.

No. 9.

INDUSTRIAL EDUCATION A PHASE OF THE  
PROBLEM OF UNIVERSAL EDUCATION.

By EUGENE D'AVENPORT,

*Dean of Agricultural College, State University, Urbana, Ill.*



WELLINGTON.

BY AUTHORITY: JOHN MACKAY, GOVERNMENT PRINTER.

1909.

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## INDUSTRIAL EDUCATION A PHASE OF THE PROBLEM OF UNIVERSAL EDUCATION.

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By EUGENE DAVENPORT, Dean of Agricultural College, State University, Urbana, Ill.

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(From *The School Century*, April, 1909.)

RIGHTLY or wrongly, for good or for ill, we are committed to a policy of universal education, a policy whose wisdom, I believe, has passed the stage of discussion among thinking people.

(Now, no system of education, however good in itself, can claim to be or hope to become universal if it does not touch and benefit all classes of men, and all legitimate branches of their activity, both industrial and non-industrial, vocational and non-vocational.) Indeed, universal education means exactly what it says—the education of all sorts of men for all sorts of purposes and in all sorts of subjects that can contribute to the efficiency of the individual in a professional way or awake and develop the best that was born into him as a man and a human being.

Looked at in this broad way, industrial education does not differ logically from any other form of professional training that requires a large body of highly specialised knowledge. Nor do industrial people as such necessarily constitute a class by themselves, but are men like other men who love and hate, who can earn and spend, who read and think, and act and vote, and do any and all other acts which may be performed by any other citizen. Now all of this leads me to maintain the thesis that industrial education is not a thing apart but is only a phase, albeit an important phase, of our general system of universal education, a thesis that is the more plausible when we remember that all men need two educations, one that is vocational and one that is not—one that will fit them to work and one that will fit them to live. When we remember that there is less difference between industry and occupation than we once assumed; when we remember that 90 per cent. of the people follow industrial pursuits, and will continue to do so; when we remember that all major industries, like other essential activities, must go on in the future as in the past, even though every man were a college graduate; and when we remember that it is for the public good that these major industries be developed and occupied by educated men, surely this position is not unreasonable.

All parties are agreed these days that in some way some sort of specialised instruction should be given in industrial pursuits in order to secure a fair degree of efficiency. The old apprentice system has passed away, and the work of instruction for industrial efficiency seems to be thrown upon the schools. It is a new problem, and they appear not to know quite what to do with it. It is perfectly clear that industrial education calls for new and different courses of instruction from those designed to fit for non-industrial pursuits, and the question is whether these constitute a part of our public-school duty or whether the peculiar educational needs of industry and of industrial people may be left to take care of themselves.

In discussing industrial education, as with all forms of education, it must always be remembered that we are dealing with the man as well as with the craftsman, and I use the term craftsman in its broadest sense to cover the work of the lawyer as well as that of the farmer. And this man : what of him ? Surely he is a factor in the case. He is something more than a farmer, or a doctor, or a lawyer, or else he is something less than a man.

His education is not to be limited by the demands of his vocation. We have too many of that kind already in all professions—a kind of museum of educational parrots that go through their daily stunts, each considering himself highly educated, and all other men at best merely trained.

Yes, the man himself—the human element in the case—he must be educated. And if he be truly educated he will, first of all, be trained in some profession—no matter what—and he will, second of all, be trained outside of his profession so that he will be bigger than the means whereby he earns his bread and butter ; and this applies to all men of all vocations, for there is no such thing as a learned profession except in the sense that all the major activities are learned.

And so I lay down the proposition that, whether the education be industrial or otherwise vocational, it is but a part, though an essential part, of the education of a man, and that all these specialised forms of vocational instruction are but different phases of our great problem of universal education to which we as a people are committed.

Like all great purposes actuating the masses of men the development of this idea of universal education has been a growth. It began with the conviction that, in justice to the individual and in safety to the State, all men of all classes should possess at least the rudiments of learning, and the first step toward a complete system of universal education was the free public school, wherein the child of the rich and of the poor alike, whether genius or dullard, may learn to read and write, and to reason, which, after all, are fundamental to all education. And so it is that our elementary education is universal in the sense that it applies to all the children of all classes of people, and without discrimination.

This marked a new epoch in the life of industrial people, because hitherto the policy of the world had been to keep working-folk ignorant in order

that they might remain contented with the hard lot to which Providence had presumably assigned them ; because, forsooth, must there not be hewers of wood and drawers of water ? So were laid the foundations for a system of universal education—universal in the sense that it applied to all men and not only afforded the rudiments of learning, but opened a highway even to the college and the learned professions—and many escaped thereby from a hard life of toil.

But no scheme of education is truly universal or can hope to become so until it not only touches and uplifts all classes of men, but also touches and uplifts their industries as well ; for it is not expedient that men should desert industry as soon as they are educated, but rather that they should remain and apply their education to the development of the industries that the people may be better served and the economic balance of things be not disturbed by the evolution of an educational system aiming to become universal.

The need of attention at this point became evident, especially to industrial people, and on the 2nd July, 1862, Abraham Lincoln affixed his signature to the most far-reaching bit of federal legislation ever enacted. I refer to the Land Grant Act, whereby there was provided for each State of the Union “ at least one college whose leading object shall be, without excluding other scientific and classical studies, . . . to teach such branches of learning as are related to agriculture and the mechanic arts . . . in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life.” Here we have the whole scheme, not only of industrial but of universal education, in a nutshell—a liberal and practical education without excluding scientific and classical studies. What a text for an educational discourse !

Building on this broadest of educational foundations most of the States have established industrial education on a new basis, and some of them have so combined and interwoven it with other forms of education that none can tell where the one leaves off and the other begins. These are the great State universities whose lead in this respect is being rapidly followed by institutions not on the land-grant foundation, and now we can truly say that on college levels to-day industrial education is not a thing apart but is an integral portion of the great educational effort by which the people of a common-wealth seek both to educate all classes of men and at the same time develop their resources, their industries, their occupations, their literature, their art, and their activities generally. This is universal education in its fullest sense.

Our elementary education, therefore, is universal in a sufficient sense, and our university education is rapidly becoming universal in its broadest sense, because here all subjects are studied and taught, and all occupations and industries are represented and made to flourish in a common atmosphere of higher education.



But as yet we have no system of secondary education that can be called universal, and until the matter is settled, and settled right at this point, our system is weak at its most important level, because it is our secondary education that touches our people during their formative period, and that really reaches the masses in such a way as to be truly universal in extent.

I say that our secondary education is not yet universal. True, the high schools are open to all who have finished the grades, but they do not offer to most classes of people that instruction which is a preparation for life and which the needs of the times and the impulse of the people demand.

The high schools took their cue originally from the old-time academies, which were training schools for classical colleges. Since then primary education has become universal because it involved nothing but opening the schools to all the people free of tuition. The education of the colleges has become or is rapidly becoming universal because the people demand that the benefits of higher education shall not be limited to a few favoured occupations and those who follow them—all upon the ground that such a course would be pernicious and against the public welfare.

The same influences are beginning to work in our high schools, and they are moving in the wake of the colleges, it seems to me, in a way that is wholly commendable, and that needs only to be accelerated and not retarded.

The high schools are schools of the people, in response to whose demands they have added to the old-time classical courses those in modern science, in manual training, in household science, and, indeed, many are now adding agriculture, stenography, telegraphy, book-keeping, typesetting, and a list of vocational courses almost too long to be mentioned, all without prejudice to but vastly to the enrichment of the old-time courses of study.

So the high schools are rapidly following in the lead of the colleges, and, if matters go on as they are now drifting, in some of our best schools it will not be long until, in response to public demand and common sense, we shall have a complete system of universal education in the largest sense of the term, and of all grades, from the elementary upward, in which men and women of all kinds and preferences will be able to get that education which will not only fit them for life but fit them to live. In the name of progress let this good work go on.

There are but three influences, it seems to me, that can interfere with the proper evolution of the high school. They may be outlined as follows:—

1. The movement in certain quarters for separate industrial schools—agricultural schools in the country and trade schools in the city—quite independent from the high-school system, which is assumed to be indifferent, if not antagonistic, to industrial life.

2. The attitude of a few remaining exponents of the old idea that schools should teach nothing that by any possibility could be put to any manner of use.

3. The difficulty involved on the part of the high schools in adding not only to their educational purpose, but to their courses of study, their equipment, and their teaching force with sufficient rapidity to meet the new demands and to mould the whole into an educational unity without such delay as shall make the claim seem true that after all the high schools have no real desire to serve the people in their industrial activities, and will do no more than is necessary to half satisfy what they regard as an irrational public demand. Thus the high schools are put at disadvantage at this most difficult period in their evolution, particularly as teachers are yet to be made even while these new ideals are to be fitted into and made a part of our permanent educational policies.

Now, these considerations are worth reviewing at the present juncture, because what the high schools need is time, and this is the element in the case least likely to be afforded. The activity of certain educators in favour of separate agricultural schools of one kind or another, and what I am bound to call the selfish influence of certain commercial interests demanding city trade schools to teach that sort of handicraft which will produce skilled workmen in the shortest possible space of time, and best enable us to meet foreign or other competition in manufactured articles—this activity and this influence seem ready to sacrifice almost anything for immediate results. This American edition of the German peasant school idea is a most dangerous because a most insidious and powerful menace to the right development of the American high school, which is or may be the most unique educational institution on earth, and which will constitute, if it can rightly develop, the key to the advantageous position which America ought to occupy both socially, politically, and economically, and which she can occupy if she is far-sighted enough at this point and at this time.

If present tendencies can go on unhampered, it will not be long until every community can have its high school which will reflect with a fair degree of accuracy its major industries, and do it, too, in the light of the world's knowledge and of the world's ideals. Such schools will turn out men and women ready to do the world's work and to think the world's thoughts, as well as to dream the world's dreams and share in its ambitions. If we combine our energies we can have such schools in America wherein every young man and every young woman can secure an education that is at once both useful and cultural, and that, too, within driving distance of the father's door. If we unite our educational energies we can do this, but we cannot do it in separate schools.

We can combine the vocational and the non-vocational in our high schools if we will, and each will be the better for the other. On the contrary, if the arts and crafts and industries are taught in separate schools, the following results are inevitable :—

1. There will be as many different schools and as many different forms of education as there are different forms of industry, with little of mutual sympathy and nothing of community of purpose.

2. The vocational future of the individual will be decided not by intelligent choice, but by the accident of proximity to one of these schools or the exigency of earning-power.

3. If industrial education is given only in industrial schools then the high schools will lose for ever their hold upon the masses, for 90 per cent. of the people are industrial and always will be. This will reduce the high schools to the teaching of girls and the work of preparing for college, and they will lose for ever the influence upon American life which they might exert by moulding the ideals of the masses as they instruct them in their industries.

4. The separate industrial schools will always be inferior to what the high school might be, for, being established to serve special ends, they will naturally attain those ends by the most direct means possible; indeed, they must be almost exclusively technical, or else resort to an amount of duplication and expense that would hardly be tolerated by their patrons.

5. The products of these schools would be successful from the narrowest business standpoint, but unsuccessful from the larger point of view; they would be trained rather than educated.

6. Such schools would force boys to choose their calling, or, indeed, have it chosen for them at a very early age, and without much opportunity for intelligent choice. Once chosen, moreover, the decision would be final. The results, however, would highly satisfy business demands, which are ever ready to sacrifice the man to his efficiency.

7. If members of the several vocations are to be educated separately the education will not only be hopelessly narrow and needlessly expensive, but, what is even worse, our people will be educated in groups separately, without knowledge of or sympathy with one another, producing a stratification of our people that is not only detrimental to society, but dangerous, if not fatal, to democratic institutions.

So, all things considered, I most earnestly advocate the taking over of our industrial education in all its forms into the existing system of secondary schools, seeing to it that one-fourth the time of every pupil is devoted to something vocational, something industrial if you please, and no industry is too common to use for this purpose. It is the common things of life that are fundamental, and it is through them that we teach life itself.

It is not necessary to bring all occupations and industries into our schools—some are not well adapted to our academic conditions—but it is necessary to bring in a goodly variety of what may be called the major activities, industrial and non-industrial, in order that life shall be taught in a variety of its forms, and that the boy shall have a reasonable chance for choice.

Trade schools? Would you have them? By all means; but I would have them as a part of the secondary school system. Agricultural schools? Yes; but as departments of the high school. Cooking schools? Yes, and



more : I would have schools of household affairs ; but I would have them as integral parts of the high school. Schools of stenography and type-writing ? Yes ; but I would not disconnect them from the high school any more than I would cut off from womankind the girl who needs perhaps for a time, perhaps always, to earn her own money.

In brief, there is no class of occupation that is followed by large masses of people that I would not bring into the high school and teach as fully as circumstances would permit, and I would compel every student to devote not less than one-fourth and not more than one-half his time to these occupational lines.

I have said that a second influence operating to restrain the high schools from moving in this matter as fast as conditions require is the remnant of an old academic belief that the purpose of schools is to " make men," whatever that may be, as distinct from making men ready for life. These are they who would teach nothing that could by any means be put to any sort of use. With them education is a luxury, not a necessity—a kind of holy thing that evaporates or in some way loses its essence when put to common uses or into the hands of the masses of men. These be they who are always careful to speak of industrial education as " training," using a term whose meaning is understood from its frequent application to horses and dogs.

Now, to such let me say that the thing which all men everywhere now demand, whatever their vocation or means of livelihood, is not training merely but education, and they mean by that such contact and intimacy with the world's stock of knowledge as shall first of all develop the industry, and second, but not secondarily, develop also the man.

Thinking men now know that, education or no education, culture or no culture, whatever the grade of civilisation we may evolve, certain fundamental industries must still go on. Moreover, they know that if these fundamental industries are to be well conducted and our natural resources developed, then these activities must be in the hands of capable men—yes, of educated men—for industry, like every other activity of man, is capable of development by means of orderly knowledge and trained minds.

They know, too, these thinking people, that men of capacity cannot be found to develop these fundamentals unless they may also themselves partake of the blessings of life and the full fruits of our civilisation. They know that the days of hewers of wood and the drawers of water, as such—condemned to a life of drudgery—are over on this earth wherever civilisation exists, and that education, like religion, must somewhat rapidly readjust itself to new conditions, and prepare to help the common average man to lead a life that is both useful to the community and a satisfaction to himself.

The aristocracy of education, like the aristocracy of religion, whereby a few were saved at the expense of the many, is over, and education, like religion, must help the common man to meet and solve the common issues

of life better than they have ever been met and solved before—hence industrial education ; hence vocational education ; hence universal education.

These good people who shy at the term industrial education are remnants of a past condition when educators and others entertained that old-time and curious conception of industry whereby industrial people were assumed to be uneducated, and were by common consent assigned a social position of natural inferiority—as if a farmer or mechanic, for example, acquired by his daily life a kind of toxic poison that not only destroyed his better faculties, but was likely to exude and soil or injure others.

Let me call the attention of these good people to the fact that, whatever their social status, the industrial people hold the balance of power politically and socially, for they constitute 90 per cent. of the population, and that for all practical purposes and in the last analysis they are the people, and their education, whatever it is to be, will really constitute our system.

The colleges learned long ago that to meet modern needs they must afford every man two educations : one intensely technical to meet his business needs and make him an efficient member of society, but which would tend to narrow him as a man ; the other non-vocational, which has no money-making power, but whose effect is to liberalise and broaden the man by attracting his interests and widening his knowledge outside the field wherein he gains his livelihood.

Now, the high schools must learn the same lesson, and the sooner they do so the better for all interests. Therefore these high schools that are introducing the industrial are developing in the right lines. The high schools are not preparatory schools for college. They are pre-eminently the schools wherein the people are fitted for life. Where one man is educated in college, twenty will get all their preparation in high schools. The high school, therefore, is the place wherein the boy shall find himself to the end that if he goes to college he will have upon matriculation exceedingly clear ideas about what he intends to do, and if he does not he can go out from the high school at once and take some useful part in the world's work. The large number of high-school men, even graduates, who have no plans and, more than all, no fitness nor preparation for any sort of useful activity is a pathetic and a dangerous fact—pathetic because so much good material has been wasted ; dangerous because the high schools must either change their ideals and introduce the industrial freely, or the industrial masses will find other schools of their own that will meet their needs as they have been met on college levels, but as they have not yet been met in secondary grades where the masses go.

Now, the colleges have learned that it is not necessary to absorb all the time of a student in order to turn out an efficient man vocationally. Much less is it necessary in secondary schools. On college levels from one-half to two-thirds of the student's time suffices for the vocational, and, when we learn better how to teach, results can doubtless be attained with still less,

leaving a generous amount of time for the pursuit of non-vocational and therefore of liberalising courses, for the effect of a course of study, whether narrowing or broadening, depends less upon the subject-matter than upon the attitude of the student and the purpose for which he takes the course.

If we will honestly take into our high schools, as we have taken into our universities, all the major activities, splitting no hairs as between the industrial and the professional, for no man can define the difference, so imperceptibly do they shade the one into the other—if we will take them all into the high schools as we have already taken them into the universities, and carry them along together, the vocational and the non-vocational side by side, day after day, from first to last so the boy is never free from either, then will all our educational necessities be met, and we shall have gained a goodly number of substantial achievements, prominent among which I would mention the following :—

1. One-fourth of the time of the boy or girl could be devoted to vocational work in class-room or laboratory throughout the course.

2. This would turn out every boy with some skill in some branch of the world's work, and do away with that large and growing number of young high-school graduates who are fitted for nothing and are good for nothing in particular.

3. It would attract the attention of the boy to self-supporting activity before he loses his natural ambition by too much schooling with no initiative.

4. It would turn out girls with some training in household affairs, and those who desired it in such occupations as women follow for self-support.

5. It would vastly uplift most occupations and all of the more ordinary industries by bringing into their practice the benefit of trained minds and methods.

6. It can do all this and still leave three-fourths of the time for the acquisition of those non-vocational lines of knowledge which all men and women need, because they are human beings getting ready to live in a most interesting world.

7. In this way we should have a single system of education under a single management, but giving to all young men and women really two educations : one that is vocational, fitting them to be self-supporting and useful ; the other non-vocational, and looking to their own development.

Expensive ? No more so than to have it done in separate schools surely. It will be done somehow, and the only question now is, Will the high schools really rise to their opportunity and secure through themselves a real system of universal education, or are they to lose their chance, and we to have in the end not a real but only a patchwork imitation of a system of universal education ?

I am perfectly well aware that all this will be held by some as a lowering of standards and a degrading of education by commercialising it. Against



this conclusion I protest most emphatically. Does it degrade a thing to use it? Does it degrade religion to uplift the fallen or to sustain the masses of men from falling? Is education a luxury to be restricted to a few favoured fortunates, or is it a power to uplift and sustain and develop all men?

Are you afraid to educate the ditch-digger? Is the education of the gentleman too good for him? Are the facts of history too profound or the satisfaction of knowledge too precious to be common property of men? Does it make my satisfaction less when it makes his more, or are you afraid that he will climb out of the ditch if he is enlightened? There is no danger of that. I have dug ditches and laid tile every month of the year, and that since I was a college graduate, and I am ready to do it again. I am ready to do my share of the world's work; yes, of the world's dirty work. It was Colonel Waring that cleaned up New York City. It was the educated engineer that made a sanitary Cuba. The educated man does anything that needs to be done to get results. It is the uneducated or the badly educated that fails to comprehend the eternal balance of things.

I desire to call attention to one more phase of our problem, to what may be called our leisure asset. There are two leisure classes, one few and unimportant, the other large and important. The first consists of the idle rich, who by accident were born after their fathers, and who intend to live a parasitic existence, paying for their needs with other people's money. They are altogether useless. It matters little how they are educated, and the sooner they die off the better for the world. They do not think; they do not act; they only vegetate and glitter. The wealthy who do not belong to this class are too busy for leisure.

The other leisure class is the great industrial mass, who, after all, own and control about all the useful leisure in the world. The minister has no leisure; the teacher has no leisure. The lawyer, the leader everywhere has no leisure. What he does is under pressure and because he must.

But the farmer, the craftsman, the industrialist generally, labours only in the daylight-hours and for a portion of his time. What he does with the balance of his waking energies is of the utmost concern. Here is the great racial asset, both social and psychical; both economic and political.

If this great mass of men, constituting all but the degenerates, can be properly educated, the racial asset of their leisure moments will in the end be tremendous. It is this mass, and what it thinks and does either blindly or intelligently, that will ultimately fix the trend of our development and the limits of our achievements. It is better that they be educated, and educated broadly.

Moreover, it is out of this mass that leaders arise, and if their education be sound then will our leaders be wise and safe. You cannot maintain any more an educated aristocracy. There will be but one aristocracy, and that will be the aristocracy of personal achievement, and if we do not want the



world entirely commercialised we must so merge our industrial education into our general system as to have in the end not a mass of separate schools with distracting aims and purposes, but a single system of education catering to all classes and all interests. It is the only influence that will preserve a homogeneous people.

In thus amalgamating the vocational and the non-vocational, I should like to say a word for what might be called the parallel system as distinct from the stratified. That is, I would have a boy from his first day in the high school to his last have to do with both the vocational and the non-vocational. I would have him every day take stock of things vocational in terms of world values. I would have him devote a full fourth of his time to what will bring him earning-power, to be used for that purpose if he needs it, and to give him an independent spirit if he does not need it. Every man is a better man if he feels the power to earn his way, whether he needs to do it or not.

Do you say that this will so cut into his time as to prevent his getting an all-round education? Then I will say that he will never get an all-round education any way; that he will learn out of school the most that he knows at forty; and that the business of the school is to give him a good start.

I beg, too, for a reform in the idea that a course is framed mainly for the one who graduates. If the vocational and the non-vocational are properly paralleled the course is good from whatever point it is left, and whenever abandoned it has taught the student the proper balance between industry and life, between the means and the ends of life.

All this will take time, because it means to some extent the readjustment of ideals, the addition of new courses of study and of new materials and methods of instruction. It means the making of a new class of teachers who must largely train themselves by a generation of experience. It means the making of a more complicated system of instruction than has ever been undertaken—a system as complicated as American democratic life.

But it is worth the while, for nothing better is possible. It is easier, of course, to short-circuit the matter by assenting to the separation of industry and education, but no race need hope for supremacy nor for the evolution of its best till it combines industry and education, which belong together in the schools as they do now and always must in life.

So I say to the high schools: "Do not wait for approved courses of study, nor for the production of skilled teachers. Go ahead and do the best you can. An honest effort is half the battle, and it is worth more now than it will ever be again. Do not hesitate till methods are marked out. If you do that you and the cause are lost, for the separate industrial school will surely come. We know the ideal—an educated American in all the activities of life. Let us go ahead and produce him, and mend our methods later on."

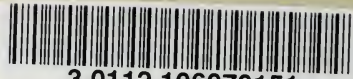
Education is no longer a luxury ; it has become a necessity for the doing of the world's work. It is no longer for the edification of the few ; it is for the satisfaction of the many. And whether we regard it as industrial or non-industrial ; as contributing to the efficiency of men or to their elevation in civilised society ; however this or any other educational problem is regarded, they are all but phases of our general and stupendous problem of universal education, in the working out of which there are as yet no models for the American secondary school.

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By Authority : JOHN MACKAY, Government Printer, Wellington —1909.

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